Floodplain Management: Salt Creek Floodplain Study

Description

Salt Creek, from Pioneers Boulevard to "O" Street, was selected as one of the three stream reaches to be modeled in the Corps of Engineers' floodplain alternatives studies. The intent was to model the physical and economic impacts under the following three scenarios:

- 1' Rise floodway (Do Nothing scenario causing 1' rise)
- ½' - Rise floodway
- 50% loss of flood fringe storage

Results

Salt Creek turned out to be an unfortunate choice for this study. Due to the complexity of the Salt Creek channel and levee system, to incompatibility of data and modeling techniques, and to the limited scope of this Corps study, the alternatives studies were not able to be meaningfully performed. Recall that the alternative scenarios were intended to be comparative to the existing situations and future conditions with no-change assumptions.

Reasons

The complexity and incompatible circumstances included:

- Salt Creek has a system of flood control levees that provide varying levels of flood protection (50-year to 100+year)
- The FEMA-mapped floodway is confined to the channel and levees, but this is based on a condition that only designated percentages of flood fringe storage are allowed to be filled, depending upon the location (0% to 100%).
- The earlier floodplain study was based upon 10-foot and 4-foot contour information, compared to 1-foot contours available with the new models
- Only limited records are available on flood fringe fills and developments since the earlier floodplain study.
- The flood fringe is compartmentalized into numerous flood storage cells, which are interdependent.
- Lack of data from the flood insurance study, much of which was done by hand calculations. This made it impractical to replicate the maps with the state of the art electronic models used for the alternative floodplain studies.

Conclusions

To accurately and completely address these alternative floodplain concepts and their impacts specifically on Salt Creek would require an extensive study of the entire basin, with new mapping, new hydrology, and new hydraulics. *Any of the proposed alternative floodplain regulation changes resulting from the analysis on Dead Mans Run and Beal Slough could be applied in the Salt Creek floodplain and the results would be a greater level of protection than the current regulations.*

References

Salt Creek Levees at Lincoln, NE, Reconnaissance Report, October 1990

Salt Creek in Lincoln, NE, Section 205 (1995-1997)

HUD, FIA, Flood Insurance Rate Map, City of Lincoln, NE, September 1976, revised November 1980

FEMA, FIA, Flood Insurance Study, City of Lincoln, NE, June 19, 1997